

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
DIVISION OF INTERNATIONAL FINANCE

Date: June 15, 2011
To: Federal Open Market Committee
From: Thomas Connors and Steven Kamin
Subject: New Framework for Staff Projections of Commodity Prices

The three attached notes, prepared by staff in the International Finance Division, present a range of empirical evidence regarding the underlying drivers of global commodity prices. Based on this empirical work, the notes go on to articulate a new framework for projecting commodity prices, which we plan to adopt on a trial basis in the August Tealbook.

The first note, by David Bowman and Joseph Gruber, finds that revisions to market forecasts of economic activity—so-called “growth surprises”—are better predictors of moves in commodity prices than actual realized levels of activity. The note also incorporates changes in exchange rates as another source of market surprise, taking the widely-held assumption that markets treat exchange rates as a random walk. Consistent with other work that we have done, the note concludes that a given depreciation of the broad dollar is associated with a roughly equal percentage increase in commodity prices, as the weaker dollar reduces the foreign-currency price of commodities and thereby pushes up demand.

The second note, by Joseph Gruber, explores a broad range of alternative empirical specifications for commodity prices and considers a number of possible explanatory variables, including interest rates, measures of global risk appetite, proxies for the increased “financialization” of commodity markets (e.g., the net long position of non-commercial traders), and inflation expectations. But, remarkably, these variables provide very little additional

explanatory power over and above that achieved by a simple model—like that outlined in the previous paragraph—that controls only for global activity and exchange rates.

The third note, by Robert Vigfusson, provides a careful discussion of the conceptual relationship between spot and futures prices. This work suggests that the relatively flat futures curves that we observe for many commodities should not come as a surprise. For any given expected price in the future, market participants will adjust their inventory positions so that the expected differential between the price now and the price in the future approximates market rates of return (adjusted for costs of storing and selling commodities). The note then examines the recent forecasting performance of commodity futures prices. This evidence suggests that futures prices have generally performed only a bit better than a random walk. But futures prices have outperformed a random walk by a much wider margin when the futures curve has had a significant upward or downward slope.

Drawing on these findings, the note by Bowman and Gruber puts forward a new approach for forecasting commodity prices. Rather than abandoning commodity futures prices altogether, they propose adjusting the futures path to incorporate differences between the staff's expectations regarding the evolution of global economic activity and exchange rates and private market expectations for these variables. While this approach does not improve the accuracy of our commodity price forecasts in the sample we have available for study, it has several important advantages relative to our current practice of using the unadjusted futures curves. First, it yields a forecast that is explicitly rooted in—and internally consistent with—the broader features of the staff forecast. Second, this framework provides a structure for examining the implications for commodity prices of varying counterfactual paths of global activity and the dollar. Both of these advantages strike us as being significant. Accordingly, we plan to implement this new framework on a trial basis starting in the August Tealbook. In addition, we intend to continue our quest to find a forecasting strategy that outperforms the futures curves. While admittedly this might be akin to tilting at windmills, our efforts to date have been informative, and we believe that some further exploration is likely to be remunerative as well.